WHAT IS CLAIMED IS:

1. An optical symbology imager, comprising:

a two dimensional photodetector having an active area for capturing an image of said optical symbology;

a focusing means for providing at least two focusing zones of said optical symbology; and

a control means for controlling said focusing means and said two dimensional photodetector to determine an optimum focus state,

wherein said focusing means is controlled by said control means to provide image data to said two dimensional photodetector for each of said at least two focusing zones,

said active area of said two dimensional photodetector shifting out said image data serially, and storing a central portion of said image data in a memory in said control means,

said control means evaluating transitions between light and dark data in said central portion of said image data to produce a representative value for each of said at least two focusing zones, wherein a largest representative value indicates which of said focusing zones provides the best focus.

2. An optical symbology imager as recited in claim 1, wherein said two dimensional photodetector is a CCD.

3. An optical symbology imager as recited in claim 2, wherein said CCD disposes of a first set of multiple scan lines, and then samples said central portion.

4. An optical symbology imager as recited in claim 3, wherein said CCD has a resolution of 659 by 494 in said active area.

5. An optical symbology imager as recited in claim 1, wherein said representative value is produced by totaling a high

frequency subset of values produced from a complete set of frequency values for each of said multiple focusing zones.

6. An optical symbology imager as recited in claim 3, wherein said representative value is produced by totaling a high frequency subset of values produced from a complete set of frequency values for each of said multiple focusing zones.

7. An optical symbology imager as recited in claim 1, wherein said control means is a microprocessor.

8. An optical symbology imager as recited in claim 1, wherein said focusing means provides twelve focusing zones.

9. An optical symbology imager as recited in claim 8, wherein said focusing means comprises a focusing disk having twelve optical positions, said focusing disk being rotatable so that each of said twelve optical positions can be moved into an optical axis of said imager, said two dimensional photodetector performing image capture for each of said twelve optical positions.

10. An optical symbology imager as recited in claim 1, further comprising an illumination means for providing variable illumination of said optical symbology.

11. An optical symbology imager as recited in claim 10, wherein said two dimensional photodetector receives said image data for multiple illumination conditions, as provided by said illumination means, said control means calculates edge totals for each image and optimum illumination is determined for one of said multiple illumination states having a largest edge total.

12. An optical symbology imager, comprising

a two dimensional photodetector having an active area for capturing an image of said optical symbology;

an illumination means for providing variable illumination of said optical symbology; and

control means for controlling said illuminating means and said two dimensional photodetector to determine optimum illumination, said illumination means providing multiple illumination conditions, said two dimensional sensor receiving image data for each of said multiple illumination conditions, said control means calculating edge totals for each image data received by said two dimensional photodetector comparing said edge totals and utilizing a largest of said edge totals as an indicator of said optimum illumination.

13. An optical symbology imager as recited in claim 12 wherein said two dimensional photodetector is a CCD.

14. An optical symbology imager as recited in claim 13, wherein said CCD disposes of a first set of multiple scan lines, and then samples said central portion.

15. An optical symbology imager as recited in claim 14, wherein said CCD has a resolution of 659 by 494 in said active area.

16. An optical symbology imager as recited in claim 12, wherein said control means is a microprocessor.

17. An optical symbology imager as recited in claim 10, wherein said illumination means comprises a dark field illuminator and a bright field illuminator.

18. An optical symbology imager as recited in claim 17, wherein said dark field illuminator comprises multiple light emitting diodes facing away from said optical symbology.

19. An optical symbology imager as recited in claim 17, wherein said bright field illuminator comprises multiple light emitting elements facing said optical symbology.

20. An optical symbology imager as recited in claim 18, wherein said bright field illuminator comprises multiple light emitting elements facing said optical symbology.

21. An optical symbology imager as recited in claim 12, wherein said illumination means comprises a dark field illuminator and a bright field illuminator.

22. An optical symbology imager as recited in claim 21, wherein said dark field illuminator comprises multiple light emitting diodes facing away from said optical symbology.

23. An optical symbology imager as recited in claim 21, wherein said bright field illuminator comprises multiple light emitting elements facing said optical symbology.

24. An optical symbology imager as recited in claim 23, wherein said bright field illuminator comprises multiple light emitting elements facing said optical symbology.

25. An optical symbology imager, comprising:

a CCD having an active area with a resolution of 659 by 494;

a focusing apparatus comprising a focusing disk with multiple optical positions to provide different focal lengths, said disk being rotatable so that each of said multiple optical positions can move into an optical path of said imager,

a microprocessor for controlling said focusing apparatus and operation of said CCD, so that said CCD performs image capture for each of said multiple optical positions,

said microprocessor controlling said CCD to shift out said image data substantially serially, and

said microprocessor evaluating transitions between light and dark data in a central set of scan lines to produce a representative value for each of said multiple optical positions, wherein a largest representative value corresponds to one of said optical positions producing optimum focus.

26. An optical symbology imager as recited in claim 25, wherein said CCD disposes of a first set of multiple scan lines, and then samples a second subsequent set of scan lines from said central set of scan lines.

27. An optical symbology imager as recited in claim 25, wherein said representative value is produced by totaling a first seven to ten values from multiple values produced for each of said multiple focusing zones.

28. A method of reading an optical symbology comprising the steps of:

capturing an image of said optical symbology in an active area of a two dimensional photodetector;

providing at least two focusing zones of said optical symbology,

controlling said two dimensional photodetector to receive said image of said optical symbology for each said two focusing zones in said active area;

said active area of said two dimensional photodetector shifting out said image data substantially serially, and

evaluating transitions between light and dark data in a central set of scan lines, producing a representative value for each of said at least two focusing zones, and determine optimum focus based upon a largest of said representative values.

29. A method of reading an optical symbology as recited in claim 28, wherein said central set of lines is ten lines.

30. A method of reading an optical symbology as recited in claim 28, further comprising the step of producing said representative value by adding a first seven to ten values from a complete set of frequency values for each of said multiple focusing zones.

31. A method of reading an optical symbology as recited in claim 28, wherein said multiple focusing zones are twelve zones.

32. A method of reading an optical symbology as recited in claim 28, wherein said focusing step comprises the step of changing between said multiple focusing zones.

33. A method of reading an optical symbology comprising the steps of:

providing multiple illumination conditions of said optical symbology;

capturing an image of said optical symbology in an active area of a two dimensional photodetector for each of said multiple illumination conditions,

determining optimum illumination by calculating edge totals for each image data received by said two dimensional photodetector;

comparing said edge total for all of said multiple illumination conditions to determine a largest edge total, and

utilizing said largest edge total as an indicator of optimum illumination.

34. An optical symbology imager as recited in claim 1, wherein said optical symbology imager is hand-held.

35. An optical symbology imager as recited in claim 12, wherein said optical symbology imager is hand-held.

36. An optical symbology imager as recited in claim 25, wherein said optical symbology imager is hand-held.

37. An optical symbology imager as recited in claim 8, wherein said focusing means comprises a focusing disk having multiple optical positions, said focusing disk being rotatable so that each of said multiple optical positions can be moved into an optical axis of said imager, said two dimensional photodetector performing image capture for each of said multiple optical positions.

38. An optical symbology imager as recited in claim 15, wherein said first set of multiple scan lines is 246 lines.

39. An optical symbology imager as recited in claim 15, wherein said second set of scan lines is substantially ten lines.

40. An optical symbology imager as recited in claim 26, wherein said first set of multiple scan lines is 246 lines.

41. An optical symbology imager as recited in claim 26, wherein said second set of scan lines is substantially ten lines.